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EXAMINER

TSANG FOSTER, SUSY N

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/942,008

Applicant(s)

HOSOYA ET AL.

Examiner

Susy N. Tsang-Foster

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-9, 11-14 and 16-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-9, 11-14, and 16-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: copy of claims dated 8/13/2004 from copending cas 09/961,895.

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office Action is responsive to the amendment filed on 1/10/2005. Claims 1-6, 10, and 15 have been cancelled. Claims 7 and 12 have been amended. Claims 19-21 have been added. Claims 7-9, 11-14, and 16-21 are pending and are finally rejected for reasons necessitated by applicant's amendment.

### ***Specification***

2. The amendment filed 1/10/2005 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: In the paragraph beginning on line 15 on page 17, changing anhydride to hydrate is new matter because when n is equal to zero, it is not a hydrate.

Applicant is required to cancel the new matter in the reply to this Office Action.

3. The disclosure is objected to because of the following informalities:

In the replacement paragraph on page 17 starting at line 15, the format of the subscripts in the chemical formulas is incorrect.

Appropriate correction is required.

### ***Claim Objections***

4. Claims 8, 9, 13, and 14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is

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required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

In claims 8 and 13, the limitation “wherein said carbon material is added before milling” does not further limit claims 7 and 12 respectively which both recite “adding the carbon material at any time during the course of mixing, milling, and sintering”. In claims 8 and 13, adding the carbon material before milling is not adding the carbon material during milling as required by claims 7 and 12.

In claims 9 and 14, the limitation “wherein said carbon material is added after sintering” does not further limit claims 7 and 12 respectively, which recites “adding the carbon material at any time during the course of mixing, milling, and sintering”. In claims 9 and 14, adding the carbon material after sintering is not adding the carbon material during sintering as required by claims 7 and 12.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 7-9, 11-14, and 16-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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In independent claims 7, 12, 19, and 20, the limitation “adding the carbon material at any time during the course of the mixing, milling, and sintering” is not in the original disclosure. It is also unclear how the carbon material would be added during the course of milling or sintering.

In claim 20, the limitation “wherein the number of water molecule  $n$  is equal to or greater than 1” is not in the original disclosure. This newly added limitation would read on values such as 10, 20, or 30 for  $n$ .

Claims depending from claims rejected under 35 USC 112, first paragraph are also rejected for the same.

7. Claims 7-9, 11-14, and 16-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In independent claims 7, 12, 19, and 20, the limitation “adding the carbon material at any time during the course of the mixing, milling, and sintering” is not enabled because it is unclear how the carbon material would be added during the course of milling or sintering. The original disclosure does not provide any guidance how the carbon material would be added during the step of milling or how the carbon material is added while the sintering step is carried out.

Claims depending from claims rejected under 35 USC 112, first paragraph are also rejected for the same.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 7-9, 11-14, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barker et al. (US 6,528,033 B1).

Barker et al. disclose a nonaqueous electrolyte cell having a cathode including a cathode active material with the formula  $\text{LiFePO}_4$  and a carbon material with a carbon content of 4.7 weight percent based on a molecular weight of  $\text{LiFePO}_4$  given as 157 g/mole and assuming complete reaction in example 1 producing 1 mol  $\text{LiFePO}_4$  and 12 g of carbon and a powder density of  $3.6 \text{ g/cm}^3$  (see Figure 1; col. 7, lines 45-53; and col. 14, lines 15-47; col. 18, lines 36-67). Barker et al. also disclose that during cycling, the x quantity of lithium is released where  $0 \leq x \leq 1$  in the case of  $\text{LiFePO}_4$  as is also known to one of ordinary skill in the art (col. 2, lines 29-46). The nonaqueous cell also includes an anode including an anode active material, a nonaqueous electrolyte and a separator film and a nonaqueous solution based electrolyte (col. 7, lines 54-65). The separator can also be polymeric electrolyte (col. 13, lines 1-45).

The method of producing the cathode active material includes providing the starting materials in particle form that comprise of a lithium containing compound, one or more metal containing compounds, a compound capable of providing the phosphate anion, and carbon powder (col. 3, lines 61-67). The starting materials are mixed together with carbon such that the carbon is intimately mixed with the product active material (col. 4, lines 4-25). The starting

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materials are mixed and dry ground with a ball mill for about 30 minutes and pressed into a pellet (col. 4, lines 30-35) before sintering (heating) the material from 750 to 800 °C in a non-oxidizing atmosphere (col. 6, lines 5-17 and col. 11, lines 5-34). Barker et al. disclose that  $\text{LiFePO}_4$  can be synthesized from  $\text{Li}_3\text{PO}_4$  and  $\text{Fe}_3(\text{PO}_4)_2$  (col. 15, lines 25-45) which reads on the instant claims when  $n = 0$  for the number of water molecules in the iron phosphate starting material. Applicant did not claim values for  $n$  and the Examiner in this instance interprets that  $n$  can be zero.

In Example III of the reference, carbon is used to synthesize one of the starting materials in part I. In part I,  $\text{Fe}_3(\text{PO}_4)_2$  is prepared using  $\text{Fe}_2\text{O}_3$ ,  $(\text{NH}_4)\text{HPO}_4$ , and carbon in the amount in excess of 36 g (col. 15, lines 1-24). Assuming 100% completion of reaction, there would still be 18 g of carbon left after the reaction. In part II of the reaction,  $\text{LiFePO}_4$  is prepared using  $\text{Fe}_3(\text{PO}_4)_2$  prepared from part I. The 1 mol of  $\text{Fe}_3(\text{PO}_4)_2$  initially contains at least 18 g of unreacted carbon from part I of the reaction. The reaction in part II contains at least 3.6 wt % carbon in the entire mixture.

It is noted that applicants of the present invention added 3 weight % of acetylene black powders based on the entire weight of the fired product (see page 20 of applicant's specification). It is noted that in Barker et al., the carbon material is 6 weight percent of the entire weight of the starting product mixture that is fired which is 100% excess of the carbon used (see col. 14, lines 15-46) such that the fired product must contain at least 3 weight percent carbon (corresponding to the 100% excess).



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The cathode prepared contains 85% by weight of active material, 10% by weight percent carbon black, and 5 % by weight binder (col. 18, lines 36-67). It is noted that carbon black is also added to the fired product.

Barker et al. does not explicitly disclose that the carbon material in the cathode is a material that has a Raman spectrum characterized by having a peak at 1350 to 1360  $\text{cm}^{-1}$  and a peak at 1570 to 1590  $\text{cm}^{-1}$  such that the ratio of the peak area of the first peak to the peak area of the second peak respectively is greater than or equal to 0.30, or adding the carbon material to the lithium phosphate and iron phosphate during the mixing of these starting materials.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add carbon after mixing  $\text{Fe}_3(\text{PO}_4)_2$  and  $\text{Li}_3\text{PO}_4$  or before mixing the two starting materials or during the mixing of the starting materials together in part II. The courts have held that the selection of any order of performing process steps is prima facie obvious in the absence of unexpected results. In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946). See MPEP 2144.04.

It is noted that the carbon material of Barker et al. was subjected to heating and grinding (ball milling) in the method of making the cathode material as stated above. The carbon material of the prior art was ground by ball milling and sintered at 750 to 800 °C which is similar to the conditions under which the carbon material was treated in applicants' invention as disclosed on page 20 and 21 of the specification. Barker et al. also disclose that zirconia media is used in the ball milling step (col. 4, lines 26-36). It is noted that applicants added 3 weight % of acetylene black powders based on the entire weight of the fired product (see page 20 of applicant's

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specification). It is noted that the carbon material is 6 weight percent of the entire weight of the starting product mixture that is fired which is 100% excess of the carbon used (see *col. 14, lines 15-46*) such that the fired product must contain at least 3 weight percent carbon (corresponding to the 100% excess). Therefore, the carbon material that is sintered in the cathode material of Barker et al. inherently has a Raman spectrum that is characterized by having a peak at 1350 to 1360  $\text{cm}^{-1}$  and a peak at 1570 to 1590  $\text{cm}^{-1}$  such that the ratio of the peak area of the first peak to the peak area of the second peak is greater than or equal to 0.30. The initial discharge capacity of the battery of Barker et al. is 121 mAh/g (see Figure 2 and *col. 19, lines 5-26*) which is comparable to the values of the initial discharge capacity of the battery of the instant invention when the ratio of A as defined in the instant claims is greater than 0.3 (see Table 3, page 39 of applicants' specification).

Since the same electrode active material is used, the same amount of carbon, and the same density of the active material is used, and similar discharge capacity is obtained by the battery containing the cathode active material of Barker et al. , the carbon material in the cathode of Barker et al. including the carbon black added to the active material is expected to have a Raman spectrum that is characterized by having a peak at 1350 to 1360  $\text{cm}^{-1}$  and a peak at 1570 to 1590  $\text{cm}^{-1}$  such that the ratio of the peak area of the first peak to the peak area of the second peak is greater than or equal to 0.30.

The court has held that claiming of a property or characteristic which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See also MPEP 2112 and 2112.01. When the Examiner has provided a sound basis for believing that the products of the applicant and the prior

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art are the same, the burden of proof is shifted to the applicant to prove that the product shown in the prior art does not possess the characteristics of the claimed product. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)

10. Claims 7-9, 11-14, and 16-20 are rejected under 35 U.S.C. 103(a) as obvious over Barker et al. (US 6,528,033 B1) and as evidenced by the CRC Handbook of Chemistry and Physics, 84<sup>th</sup> Edition, CRC Press, LLC 2004, p. 4-63).

Barker et al. discloses all the limitations of claims 7-9, 11-14, and 16-20 (see above) except explicitly disclosing that the ferric phosphate is a hydrate where n is interpreted by the Examiner to be greater than zero since applicant did not define the values for n.

The CRC Handbook of Chemistry and Physics discloses that iron (II) phosphate with chemical formula  $\text{Fe}_3(\text{PO}_4)_2$  is a hygroscopic compound (denoted by the abbreviation hyg on page 4-63). Because of its hygroscopic property, Iron (II) phosphate adsorbs water and would inherently exist in a hydrated form where  $n > 0$ , especially as ferric phosphate octahydrate as shown on page 4-63 of the CRC Handbook.

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barker et al. (US 6,528,033 B1) in view of Christian et al. (US 6,403,257 B1).

Barker et al. disclose all the limitations of claim 21 except that the ball milling is carried out by one of a planetary ball mill, a shaker type ball mill and a mechano-fusion mill. It is noted that Barker et al. do disclose using zirconia media in the ball milling step (col. 4, lines 26-36) but does not disclose the specific ball milling apparatus used to carry out the ball milling step.

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Christian et al. disclose the use of a planetary mill and multi-axial shaker/mixer using zirconia beads (balls) as a media (col. 9, lines 20-65) to provide mechanical activation during the mixing of reactant powders to form oxide active materials for positive electrodes of batteries the reactant powders are combined with a milling media in a vessel that is mechanically agitated (col. 6, lines 30-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a planetary ball mill (using zirconia balls as milling media) or a shaker/mixer using zirconia ball media to ball mill the starting material mixtures of Barker et al. because these apparatuses provide mechanical activation to the mixtures through intense agitation and such intense agitation would provide the necessary intimate mixing of the starting materials that result in the carbon being intimately dispersed through the precursor product to enhance conductivity of the product and the presence of the carbon particles intimately mixed with the starting materials would provide nucleation sites for the production of the product crystals as taught by Barker et al. (see col. 4, lines 5-25 of Barker et al.).

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 7-9, 11-14, 19, and 20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4 and 10 of copending Application No. 09/961,895 in view of Barker et al. (US 6,528,033 B1).

The difference between claims 4 and 10 of the copending application and instant claims 7-9, and 11-14 is that claims 4 and 10 of the copending application do not recite that the carbon material in cathode active material is not less than 3 wt%, and that the carbon material satisfies the condition that the ratio of peak area appearing from  $1350\text{ cm}^{-1}$  to  $1360\text{ cm}^{-1}$  to the peak area appearing from  $1570\text{ cm}^{-1}$  to  $1590\text{ cm}^{-1}$  in the Raman spectrum is greater than or equal to 0.30.

Barker et al. teach a battery comprising a cathode comprising 85 wt%  $\text{LiFePO}_4$ , 10% by weight carbon black and 5% by weight binder where the carbon black inherently has a Raman spectrum characterized by having a peak at  $1350$  to  $1360\text{ cm}^{-1}$  and a peak at  $1570$  to  $1590\text{ cm}^{-1}$  such that the ratio of the peak area of the first peak to the peak area of the second peak is greater than or equal to 0.30 for reasons give above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add 10% by weight carbon black having a Raman spectrum that is characterized by having a peak at  $1350$  to  $1360\text{ cm}^{-1}$  and a peak at  $1570$  to  $1590\text{ cm}^{-1}$  such that the ratio of the peak area of the first peak to the peak area of the second peak is greater than or equal to 0.30 to the cathode recited in claims 4 and 10 of the copending application because this amount of

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carbon black having a Raman spectrum that is characterized by having a peak at 1350 to 1360  $\text{cm}^{-1}$  and a peak at 1570 to 1590  $\text{cm}^{-1}$  such that the ratio of the peak area of the first peak to the peak area of the second peak is greater than or equal to 0.30 is effective for increasing the electrical conductivity of the cathode which improves battery performance.

This is a provisional obviousness-type double patenting rejection.

14. Claim 21 is are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 4 of copending Application No. 09/961,895 in view of Barker et al. (US 6,528,033 B1) as applied to claim 7 above and further in view of and Christian (US 6,403,257 B1)..

Copending claim 4 of application No. 09/961,895 as modified by Barker et al. teach all the limitations of claim 21 except that the ball milling is carried out by one of a planetary ball mill, a shaker type ball mill and a mechano-fusion mill. It is noted that Barker et al. do disclose using zirconia media in the ball milling step (col. 4, lines 26-36) but does not disclose the specific ball milling apparatus used to carry out the ball milling step.

Christian et al. disclose the use of a planetary mill and multi-axial shaker/mixer using zirconia beads (balls) as a media (col. 9, lines 20-65) to provide mechanical activation during the mixing of reactant powders combined with a milling media in a vessel that is mechanically agitated (col. 6, lines 30-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a planetary ball mill (using zirconia balls as milling media) or a shaker/mixer using zirconia ball media to ball mill the starting material mixtures of Barker et al. because these apparatuses provide mechanical activation to the mixtures through intense agitation and such

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intense agitation would provide the necessary intimate mixing of the starting materials such that the carbon would be intimately dispersed through the precursor product to enhance conductivity of the product and the presence of the carbon particles intimately mixed with the starting materials would provide nucleation sites for the production of the product crystals as taught by Barker et al. (see col. 4, lines 5-25 of Barker et al.).

This is a provisional obviousness-type double patenting rejection.

### ***Response to Arguments***

15. Applicant's arguments filed 1/10/2005 have been fully considered but they are not persuasive.

*With respect to art rejections based on Barker et al., applicant asserts that while Barker et al. teaches the use of 0.5 mols of carbon, along with  $\text{FePO}_4$  and  $\text{Li}_2\text{CO}_3$  to synthesize  $\text{LiFePO}_4$ , it does not teach adding carbon to a starting material which comprises lithium phosphate and iron phosphate hydrates and that while Barker et al. teaches using  $\text{Li}_3\text{PO}_4$  and  $\text{Fe}_3(\text{PO}_4)_2$  to synthesize  $\text{LiFePO}_4$  as taught in Example III of Barker et al., Barker et al. fails to teach or disclose adding carbon to the  $\text{Li}_3\text{PO}_4$  and  $\text{Fe}_3(\text{PO}_4)_2$  and that none of the examples shown in Barker et al. teach the method recited in claim 7 which requires both the use of lithium phosphate and iron phosphate hydrates as starting materials for the synthesis of  $\text{Li}_x\text{FePO}_4$  and the adding of carbon material at any time point in the course of mixing, milling and sintering the starting material.*

Contrary to applicant's assertions, Example III of Barker et al. does teach the use of carbon in the synthesis of  $\text{LiFePO}_4$ . In Example III, carbon is used to synthesize one of the

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starting materials in part I. In part I,  $\text{Fe}_3(\text{PO}_4)_2$  is prepared using  $\text{Fe}_2\text{O}_3$ ,  $(\text{NH}_4)\text{HPO}_4$ , and carbon in the amount in excess of 36 g (col. 15, lines 1-24). Assuming 100% completion of reaction, there would still be 18 g of carbon left after the reaction. In part II of the reaction,  $\text{LiFePO}_4$  is prepared using  $\text{Fe}_3(\text{PO}_4)_2$  prepared from part I. The 1 mol of  $\text{Fe}_3(\text{PO}_4)_2$  initially contains at least 18 g of unreacted carbon from part I of the reaction. The reaction in part II contains at least 3.6 wt % carbon in the entire mixture. It is immaterial whether the carbon is added after, before, or during the mixing  $\text{Fe}_3(\text{PO}_4)_2$  and  $\text{Li}_3\text{PO}_4$  together in part II. The courts have held that the selection of any order of performing process steps is prima facie obvious in the absence of unexpected results. In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946). See MPEP 2144.04.

Furthermore, Examples 1 and III of Barker et al. show that a variety of lithium compounds may be used interchangeably as the source of lithium as disclosed by Barker et al. at column 3, line 55 to col. 4, line 25. Therein, Barker et al. also state that the starting materials are mixed together with carbon, which is included in an amount sufficient to reduce the metal ion of one or more of the metal-containing starting materials without full reduction to an elemental metal state and that excess quantities of carbon and one or more of the starting materials may be used to enhance product quality.

*With respect to newly added claim 21, applicant asserts that none of the references disclose using one of a planetary ball mill, a shaker type ball mill or a mechano-fusion mill.*

Applicant's assertions are moot in view of the new grounds of rejection given above.



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With respect to the obviousness type double patenting rejections based on copending application 09/961,895, applicant asserts on page 9 of the present amendment that the copending application in view Barker et al. does not disclose a method wherein lithium phosphate and iron phosphate hydrate are used as starting material for synthesis of  $\text{Li}_x\text{FePO}_4$ . In response, claims 4 and 10 of the copending application specifically recite these limitations. For applicant's convenience, a copy of the claims (dated 8/13/2004) in copending application 09/961,895 is attached to this Office Action for applicant's convenience. As seen the copy of the attached claims in 09/961,895, copending claims 4 and 10 specifically recite a method wherein lithium phosphate and iron phosphate hydrates are used as the starting materials for the synthesis of  $\text{Li}_x\text{FePO}_4$ .

### ***Conclusion***

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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17. Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (571) 272-1293. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (571) 272-1292.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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